

AD-A045 435

FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OHIO

F/O 21/5

COOLED WORKING BLADE OF A GAS TURBINE, (U)

MAY 77 A A KANTSEPOLSKIY, S Z KOPELEV

UNCLASSIFIED

FTD-ID(RS)I-0673-77

NL

1 OF 1
AD
A045435



END
DATE
FILMED

11-77

DDC

AD-A045435

FTD-ID(RS)I-0673-77

0

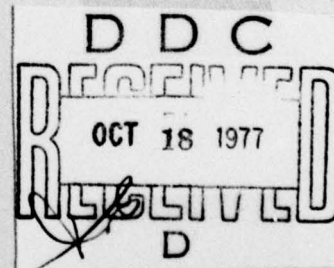
FOREIGN TECHNOLOGY DIVISION



COOLED WORKING BLADE OF A GAS TURBINE

by

A. A. Kantsepol'skiy, S. Z. Kopelev



Approved for public release;
distribution unlimited.

ACCESSION BY	
DTIS	White Section <input checked="" type="checkbox"/>
DDC	Diff. Section
UNANNOUNCED	
JUSTIFICATION	
BY	
DISTRIBUTION/AVAILABILITY CODES	
Dist.	AVAIL. and/or SPECIAL

FTD-

ID(RS)I-0673-77

EDITED TRANSLATION

A

FTD-ID(RS)I-0673-77 11 May 1977

FD-77-C-000521
COOLED WORKING BLADE OF A GAS TURBINE

By: A. A. Kantsepol'skiy, S. Z. Kopelev

English pages: 2

Source: USSR Patent Nr 333278, 21 March 1972
pp. 1-2.

Country of origin: USSR

Translated by: SrAmn Martin J. Folan

Requester: FTD/PDRS

Approved for public release,
distribution unlimited

THIS TRANSLATION IS A RENDITION OF THE ORIGINAL FOREIGN TEXT WITHOUT ANY ANALYTICAL OR EDITORIAL COMMENT. STATEMENTS OR THEORIES ADVOCATED OR IMPLIED ARE THOSE OF THE SOURCE AND DO NOT NECESSARILY REFLECT THE POSITION OR OPINION OF THE FOREIGN TECHNOLOGY DIVISION.

PREPARED BY:

TRANSLATION DIVISION
FOREIGN TECHNOLOGY DIVISION
WP-AFB, OHIO.

FTD-

ID(RS)I-0673-77

Date 11 May 19 77

U. S. BOARD ON GEOGRAPHIC NAMES TRANSLITERATION SYSTEM

Block	Italic	Transliteration	Block	Italic	Transliteration
А а	<i>А а</i>	A, a	Р р	<i>Р р</i>	R, r
Б б	<i>Б б</i>	B, b	С с	<i>С с</i>	S, s
В в	<i>В в</i>	V, v	Т т	<i>Т т</i>	T, t
Г г	<i>Г г</i>	G, g	У у	<i>У у</i>	U, u
Д д	<i>Д д</i>	D, d	Ф ф	<i>Ф ф</i>	F, f
Е е	<i>Е е</i>	Ye, ye; E, e*	Х х	<i>Х х</i>	Kh, kh
Ж ж	<i>Ж ж</i>	Zh, zh	Ц ц	<i>Ц ц</i>	Ts, ts
З з	<i>З з</i>	Z, z	Ч ч	<i>Ч ч</i>	Ch, ch
И и	<i>И и</i>	I, i	Ш ш	<i>Ш ш</i>	Sh, sh
Й й	<i>Й й</i>	Y, y	Щ щ	<i>Щ щ</i>	Shch, shch
К к	<i>К к</i>	K, k	Ъ ъ	<i>Ъ ъ</i>	"
Л л	<i>Л л</i>	L, l	Ы ы	<i>Ы ы</i>	Y, y
М м	<i>М м</i>	M, m	Ь ь	<i>Ь ь</i>	'
Н н	<i>Н н</i>	N, n	Э э	<i>Э э</i>	E, e
О о	<i>О о</i>	O, o	Ю ю	<i>К</i>	Yu, yu
П п	<i>П п</i>	P, p	Я я	<i>Я я</i>	Ya, ya

*ye initially, after vowels, and after ъ, ы; e elsewhere.
 When written as ё in Russian, transliterate as yë or ë.
 The use of diacritical marks is preferred, but such marks may be omitted when expediency dictates.

GREEK ALPHABET

Alpha	Α α	Nu	Ν ν
Beta	Β β	Xi	Ξ ξ
Gamma	Γ γ	Omicron	Ο ο
Delta	Δ δ	Pi	Π π
Epsilon	Ε ε	Rho	Ρ ρ
Zeta	Ζ ζ	Sigma	Σ σ
Eta	Η η	Tau	Τ τ
Theta	Θ θ	Upsilon	Υ υ
Iota	Ι ι	Phi	Φ φ
Kappa	Κ κ	Chi	Χ χ
Lambda	Λ λ	Psi	Ψ ψ
Mu	Μ μ	Omega	Ω ω

RUSSIAN AND ENGLISH TRIGONOMETRIC FUNCTIONS

Russian	English
---------	---------

sin	sin
-----	-----

cos	cos
-----	-----

tg	tan
----	-----

ctg	cot
-----	-----

sec	sec
-----	-----

cosec	csc
-------	-----

sh	sinh
----	------

ch	cosh
----	------

th	tanh
----	------

cth	coth
-----	------

sch	sech
-----	------

csch	csch
------	------

arc sin	\sin^{-1}
---------	-------------

arc cos	\cos^{-1}
---------	-------------

arc tg	\tan^{-1}
--------	-------------

arc ctg	\cot^{-1}
---------	-------------

arc sec	\sec^{-1}
---------	-------------

arc cosec	\csc^{-1}
-----------	-------------

arc sh	\sinh^{-1}
--------	--------------

arc ch	\cosh^{-1}
--------	--------------

arc th	\tanh^{-1}
--------	--------------

arc cth	\coth^{-1}
---------	--------------

arc sch	sech^{-1}
---------	----------------------------

arc csch	csch^{-1}
----------	----------------------------

rot	curl
-----	------

lg	log
----	-----

GRAPHICS DISCLAIMER

All figures, graphics, tables, equations, etc. merged into this translation were extracted from the best quality copy available.

COOLED WORKING BLADE OF A GAS TURBINE

A. A. Kantsepol'skiy, S. Z. Kopelev

Cooled working blades of a gas turbine with a root, for example, of the fir-tree type, in which there is an aperture for the supply of cooling air, are known.

The proposed blade differs from the known ones by the fact that on the edges of the root end continuous projections are made with transverse slots for a footing which fixes the blade in an axial direction.

This making of the blade decreased leakage of cooling air.

The described blade is illustrated in the drawing.

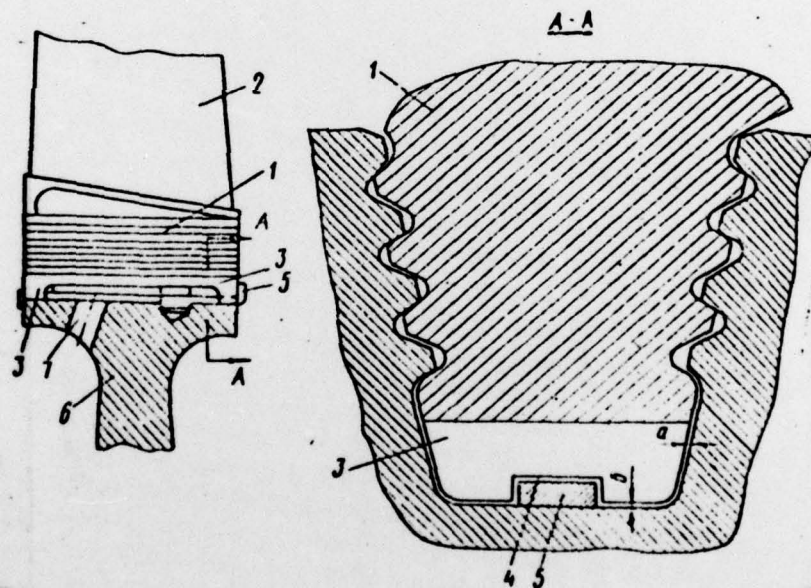
On the root 1 of the blade 2 two projections 3 are made on the edges of the end, on which a slot 4 is made for placing the footing 5 which fixes the blade in an axial direction.

These projections are made so that the gaps a and b are minimum and less than the gaps in the remaining part of the joint. Packing can be achieved with the aid of plates (instead of projections) inserted in the slot in the blade. Between the root and the disk 6 of the turbine a cavity is created, thanks to which

the cooling air, flowing through the aperture 7 in the disk cannot leak outside the rotor.

Subject of the Invention

A cooled working blade of a gas turbine with a root, for example of the fir-tree type, in which an aperture is made for supply of cooling air, is distinguished by the fact that for the purpose of decreasing the leakage of cooling air, continuous projections are made with transverse slots on the edges of the root end for a footing which fixes the blade in an axial direction.



UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER FTD-ID(RS)I-0673-77	2. GOVT ACCESSION NO.	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle) COOLED WORKING BLADE OF A GAS TURBINE		5. TYPE OF REPORT & PERIOD COVERED Translation
		6. PERFORMING ORG. REPORT NUMBER
7. AUTHOR(s) A. A. Kantsepol'skiy, S. Z. Kopelev		8. CONTRACT OR GRANT NUMBER(s)
9. PERFORMING ORGANIZATION NAME AND ADDRESS Foreign Technology Division Air Force Systems Command U. S. Air Force		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS
11. CONTROLLING OFFICE NAME AND ADDRESS		12. REPORT DATE 21 March 1972
		13. NUMBER OF PAGES 2
14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office)		15. SECURITY CLASS. (of this report) UNCLASSIFIED
		15a. DECLASSIFICATION/DOWNGRADING SCHEDULE
16. DISTRIBUTION STATEMENT (of this Report) Approved for public release; distribution unlimited		
17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)		
18. SUPPLEMENTARY NOTES		
19. KEY WORDS (Continue on reverse side if necessary and identify by block number)		
20. ABSTRACT (Continue on reverse side if necessary and identify by block number) 21		

DISTRIBUTION LIST

DISTRIBUTION DIRECT TO RECIPIENT

ORGANIZATION	MICROFICHE	ORGANIZATION	MICROFICHE
A205 DMATC	1	E053 AF/INAKA	1
A210 DMAAC	2	E017 AF/ RDXTR-W	1
B344 DIA/RDS-3C	8	E404 AEDC	1
C043 USAMIIA	1	E408 AFWL	1
C509 BALLISTIC RES LABS	1	E410 ADTC	1
C510 AIR MOBILITY R&D	1	E413 ESD	2
LAB/FIO		FTD	
C513 PICATINNY ARSENAL	1	CCN	1
C535 AVIATION SYS COMD	1	ETID	3
C557 USAIIC	1	NIA/PHS	1
C591 FSTC	5	NICD	5
C619 MIA REDSTONE	1		
D008 NISC	1		
H300 USAICE (USAREUR)	1		
P005 ERDA	1		
P055 CIA/CRS/ADD/SD	1		
NAVORDSTA (50L)	1		
NAVWPNSCEN (Code 121)	1		
NASA/KSI	1		
[REDACTED]	1		
AFIT/LD	1		